#62/Corrected Brief 9-16-02 L. Sprunell

Attorney Docket No.: 111667-1000 REISSUE PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of:	Davis et al.
Reissue Serial No.:	09/315,796
Filed:	May 20, 1999
For:	Combined Lithographic/Flexographic Printing Apparatus and Process
Examiner:	Funk, Stephen

Box: REISSUE
Commissioner for Patents
Washington D.C. 20231

APPEAL BRIEF

REAL PARTY IN INTEREST

The real party in interest is Williamson Printing Corporation, 6700 Denton Drive, Dallas, Texas 75235-4497.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

This is an appeal from the Final Action dated December 18, 2001. Claims 6-11, 15-38 and 42-151 stand rejected. Claims 1-5, 12-14 and 39-41 have been allowed. Claims 58, 59, and 82-84 have been identified as allowable if amended to overcome the Examiner's rejections under 35 U.S.C. § 112.

STATUS OF AMENDMENTS

Applicants have submitted amendments to claims 9, 15, 21, 44-46, 52, 55, 57-58, 60, 64, 66, 72-78, 82, 85-87, 89, 91, 93-94, 96-97, 99-100, 102-103, 108-109, 113-121, 123-125, 130, 137, 141-142, 144 and 151 in the Reply and Amendment filed on September 14, 2001. In the

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Final Action, the Examiner stated that certain of these submitted amendments were not in compliance with 37 C.F.R. § 1.173(d). These amendments have, however, been entered by the Examiner in order to advance prosecution. A revised amendment of the above claims, complying with 37 C.F.R. § 1.173(d) is submitted herewith.

SUMMARY OF THE INVENTION

The invention to which the claims presently under appeal are directed relates to a set of new high-volume printing methods capable of producing substantial efficiency and quality improvements over methods known in the past. The new methods invented by the Applicants involve the combination of traditional offset *lithographic* printing processes with what are known as *flexographic* printing processes. (See Abstract to U.S. Patent No. 5,630,363).

Offset lithography is a process well known in the art that utilizes the planographic method. The ink pattern and nonprinting areas are disposed on the same surface of a thin metal plate, which transfers the ink pattern to a substrate passing through the press. In flexographic printing, a pattern is applied to a substrate by means of a roll printing technique in which a raised pattern is applied to an image carrier made of a flexible material mounted on a rigid cylinder.

Problems are known to occur in the offset lithographic process when attempting to print lighter colors such as white over other colors, owing to the fact that a single layer of the lighter color is not sufficiently opaque. In such cases, the sheet receiving the lighter ink often has to be run through the same printer several times before the lighter color becomes sufficiently opaque to cover the underlying colors. (See Background to U.S. Patent No. 5,630,363, col. 3, lines 40-67).

In order to improve the efficiency of the printing process, the improved process invented by Applicants incorporates one or more flexographic printing stations in the press. Within each flexographic printing station, a flexographic plate is placed around the station's blanket cylinder, in order to receive the ink or other liquid material and transfer it to the impression cylinder for printing.

A device known as an "anilox roller" is used for supplying the liquid material to the flexographic plate. (See U.S. Patent No. 5,630,363 col. 6 lines 12-32). An anilox roller is essentially an ink-metering roller. Its surface is engraved with tiny, uniform cells that carry and deposit a thin, controlled layer of ink film or coating material onto the plate. In flexographic

presswork, anilox rollers transfer a controlled ink film from the roller to the web to print the image. Anilox rollers are also used in remoistenable glue units and to create "scratch-and-sniff" perfume ads. In certain embodiments, a high-velocity air dryer is disposed immediately after the flexographic station, in order to quickly dry the disposed ink or other liquid material. (See U.S. Patent 5,630,363, col. 6, lines 33-51).

In the Applicants' process, wherever there is a need for an increased thickness or opacity of ink, or wherever a type of ink is to be deposited that is not compatible with offset lithographic processing, the printing is done with a flexographic station rather than a lithographic station. (See U.S. Patent No. 5,630,363 col. 6 lines 57-65).

ISSUES

1. Whether claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 are unpatentable under 35 U.S.C. § 251 as being based upon new matter added to the patent for which reissue is sought.

2. Whether claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 are unpatentable under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Whether claims 6-8, 38, and 49-51 are unpatentable under 35 U.S.C. § 103(a) as being obvious over German Gebrauchsmuster 93 05 552.8 to MAN Roland ("MAN Roland") in view of the 1990 "Pantone Library of Color" ("Pantone") and the March, 1993 issue of Offsetpraxis ("Offsetpraxis").

4. Whether claims 9 and 52 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Pantone and Offsetpraxis as applied to claims 6-8, 38, and 49-51, and further in view of United States Patent No. 4,841,903 to Bird ("Bird").

5. Whether claims 42 and 43 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Pantone and Offsetpraxis as applied to claims 6-8, 38, and 49-51, and further in view of United States Patent No. 4,188,883 to Schone et al. ("Schone").

6. Whether claims 10, 29, and 31-33 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of United States Patent No. 4,308,796 to Satterwhite.

7. Whether claims 11, 30, and 60-66 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Bird.

8. Whether claim 67 is unpatentable under 35 U.S.C. 103(a) as being obvious over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60-66, and further in view of United States Patent No. 5,079,044 to Schumacher et al. ("Schumacher").

9. Whether claims 68-71 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60-66, and further in view of Pantone and Offsetpraxis.

10. Whether claims 34-36 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Schumacher et al.

11. Whether claims 42, 43, and 53 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Schone et al.

12. Whether claim 54 is unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and Schone et al. as applied to claims 42, 43, and 53, and further in view of Bird.

13. Whether claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144 are unpatentable under 35 U.S.C. 103(a) as being obvious over MAN Roland in view of Bird.

14. Whether claim 24 is unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-48, 55, 88 - 93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of Schumacher et al.

15. Whether claims 25-28, 131-134, and 145-148 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of Pantone and Offsetpraxis.

16. Whether claims 56, 57, 135, 136, 149, and 150 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-

48, 55, 88 - 93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of United States Patent No. 4,109,572 to Roulleau ("Roulleau").

17. Whether claims 137 and 151 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird and Roulleau as applied to claims 56, 57, 135, 136, 149, and 150, and further in view of Schumacher et al.

18. Whether claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird and Schone et al.

19. Whether claims 131-134 and 145-148 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird and Schone et al. as applied to claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144, and further in view of Pantone and Offsetpraxis.

20. Whether claims 135, 136, 149, and 150 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird and Schone et al. as applied to the claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144, and further in view of Roulleau.

21. Whether claims 137 and 151 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Bird, Schone et al., and Roulleau as applied to claims 135, 136, 149, and 150, and further in view of Schumacher et al.

22. Whether claims 72, 74, 76, 86, and 87 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Schone et al.

23. Whether claim 73 is unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Schone et al. as applied to claims 72, 74, 76, 86, and 87, and further in view of Bird.

24. Whether claims 77-79 are unpatentable under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Schone et al. as applied to claims 72, 74, 76, 86, and 87, and further in view of Schumacher et al.

25. Whether claims 6, 10, 29, 31, 38, 44-46, and 49 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 5,638,752 to Hartung et al. ("Hartung '752").

26. Whether claims 6, 10, 29, 31, 38, 44-46, and 49 are unpatentable under 35 U.S.C. § 102(a) as being anticipated by European Patent 620,115 to Hartung et al. ("Hartung '115").

27. Whether claims 7, 8, 32, 33, 47, 48, 50, and 51 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Hartung '752 or Hartung '115.

28. Whether claims 9, 11, 15-23, 25-28, 30, 37, 52, 55-57, 60-66, 68-71, 88-90, 91-93, 97-99, 103-108, 114-118, 124, 126-134, 138, and 140-148 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Hartung '752 or Hartung '115 in view of Bird.

29. Whether claims 53, 72, 74-76, 81, and 85-87 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Hartung '752 or Hartung '115 in view of Schone et al.

30. Whether claims 54, 73, 80, 94-96, 100-102, 109-113, 119-123, 125, 127-134, 139, and 142-148 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Hartung '752 or Hartung '115 in view of Bird and Schone et al.

31. Whether claims 6, 10, 29, 31, 38, 44-46, and 49 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by MAN Roland.

32. Whether claims 91-123 comply with 37 C.F.R. § 1.75(a).

GROUPING OF CLAIMS

1. Claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 251 as being based upon new matter added to the patent for which reissue is sought.

2. Claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Claims 6-8, 38, and 49-51 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Pantone and Offsetpraxis.

4. Claims 9 and 52 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in

view of Pantone and Offsetpraxis as applied to claims 6-8, 38, and 49-51, and further in view of Bird.

5. Claims 42 and 43 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Pantone and Offsetpraxis as applied to claims 6-8, 38, and 49-51, and further in view of Schone.

6. Claims 10, 29, and 31-33 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite.

7. Claims 11, 30, and 60-66 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Bird.

8. Claim 67 is a group for the purposes of appeal of the Examiner's rejection of this claim under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60-66, and further in view of Schumacher.

9. Claims 68-71 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60-66, and further in view of Pantone and Offsetpraxis.

10. Claims 34-36 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Schumacher.

11. Claims 42, 43, and 53 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31-33, and further in view of Schone.

12. Claim 54 is a group for the purposes of appeal of the Examiner's rejection of this claim under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Schone as applied to claims 42, 43, and 53, and further in view of Bird.

13. Claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird ('903).

14. Claim 24 is a group for the purposes of appeal of the Examiner's rejection of this claim under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-48, 55, 88 - 93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of Schumacher

15. Claims 25-28, 131-134, and 145-148 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of Pantone and Offsetpraxis.

16. Claims 56, 57, 135, 136, 149, and 150 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird as applied to claims 15-23, 37, 44-48, 55, 88 - 93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, and further in view of Roulleau (US 4,109,572).

17. Claims 137 and 151 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird and Roulleau as applied to claims 56, 57, 135, 136, 149, and 150, and further in view of Schumacher

18. Claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird and Schone

19. Claims 131-134 and 145-148 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird and Schone as applied to claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144, and further in view of Pantone and Offsetpraxis.

20. Claims 135, 136, 149, and 150 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird and Schone as applied to the claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144, and further in view of Roulleau.

21. Claims 137 and 151 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Bird, Schone, and Roulleau as applied to claims 135, 136, 149, and 150, and further in view of Schumacher.

22. Claims 72, 74, 76, 86, and 87 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Schone.

23. Claim 73 is a group for the purposes of appeal of the Examiner's rejection of this claim under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Schone as applied to claims 72, 74, 76, 86, and 87, and further in view of Bird.

24. Claims 77-79 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over MAN Roland in view of Schone as applied to claims 72, 74, 76, 86, and 87, and further in view of Schumacher.

25. Claims 6, 10, 29, 31, 38, 44-46, and 49 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 102(e) as being anticipated by Hartung '752.

26. Claims 6, 10, 29, 31, 38, 44-46, and 49 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 102(a) as being anticipated by Hartung '115.

27. Claims 7, 8, 32, 33, 47, 48, 50, and 51 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over Hartung ('752) or ('115).

28. Claims 9, 11, 15-23, 25-28, 30, 37, 52, 55-57, 60-66, 68-71, 88-90, 91-93, 97-99, 103-108, 114-118, 124, 126-134, 138, and 140-148 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over Hartung ('752) or ('115) in view of Bird.

29. Claims 53, 72, 74-76, 81, and 85-87 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over Hartung ('752) or ('115) in view of Schone

30. Claims 54, 73, 80, 94-96, 100-102, 109-113, 119-123, 125, 127-134, 139, and 142-148 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 103(a) as being unpatentable over Hartung ('752) or ('115) in view of Bird and Schone.

31. Claims 6, 10, 29, 31, 38, 44-46, and 49 are a group for the purposes of appeal of the Examiner's rejections of these claims under 35 U.S.C. § 102(b) as being anticipated by MAN Roland.

32. Claims 91-123 are a group for the purposes of the Examiner's objections under 37 C.F.R. § 1.75(a).

ARGUMENTS

Claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 have been rejected under 35 U.S.C. § 251 as being based upon new matter. Claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 have been rejected under 35 U.S.C. § 112, first paragraph as containing subject matter not described in the specification. Claims 91-123 are objected to under 37 C.F.R. § 1.75(a) as being indefinite for failing to point out and distinctly claim the subject matter that applicant regards as the invention. Claims 6, 10, 29, 31, 38, 44-46, and 49 have been rejected under 35 U.S.C. § 102. Claims 6-11, 15-38, 42-57, 60-77, 79-81, and 85-151 have been rejected under 35 U.S.C. § 103(a).

1. The Examiner's rejection of claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 under 35 U.S.C. § 251 was improper.

The Examiner has rejected claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 under 35 U.S.C. § 251 as being directed to new matter. Specifically, the Examiner has stated that:

> Title 35 of the United States Code, § 251 states, in part, that "[N]o new matter shall be introduced into the application for reissue." "New matter" is characterized as matter that departs from or adds to the original disclosure. *Stearn v. Superior Distributing Co.*, 674 F.2d 539, 544 (6th Cir. 1982). Matter is not new matter if it is inherently disclosed in the original disclosure of the application. *Id.* The test for inherency is whether a person of ordinary skill in the art would recognize "that the missing descriptive matter is necessarily present in the thing described in the reference." *In re Robertson*, 169 F.3d 743, 745 (C.A.F.C. 1999).

The claims rejected by the Examiner under 35 U.S.C. § 251 are, in part, directed to printing on both sides of a substrate in a single-pass printing process, which is known as "perfector printing." The use of perfector printing in the types of presses and processes covered by the Applicants' invention is explicitly disclosed in issued United States Patent No. 5,630,363 at col. 2, lines 46-58, which reads as follows:

> Offset lithography has equipment for short, medium and long runs. Both sheetfed and web presses are used. Sheetfed lithography is used for printing advertising, books, catalogs, greeting cards, posters, labels, packaging, folding boxes, decalcomanias, coupons, trading stamps, and art reproductions. *Many sheetfed presses can perfect (print both sides of the paper) in one pass through the press.* Web offset is used for printing business forms, newspapers, preprinted newspaper inserts, advertising literature, catalogs, long-run books, encyclopedias, and magazines. (emphasis added).

In response to this explicit disclosure of perfector printing by name, the Examiner has asserted that "the disclosure in column 2, lines 54-55 only refers to the prior art without any specific reference to the instant invention." (See Office Action dated April 17, 2001). Applicants respectfully submit that the Examiner has placed an unreasonably high hurdle in front of Applicants on this point. It is undisputed that: (1) Applicants have disclosed an invention used in combination with an offset printing press, and (2) Applicants have explicitly disclosed that *many* offset printing presses incorporate perfector printing. Accordingly, Applicants respectfully submit that this explicit disclosure, by itself, is sufficient to overcome the Examiner's rejection of these claims as incorporating new matter.

In addition to the above, Applicants have provided additional objective evidence in support of their position. As stated by Applicant's expert Raymond J. Prince in his original declaration, which forms a part of the prosecution history of the present application:

> 2. I have been asked to review U.S. Patent 5,560,363 and give my opinion as to its teachings to one of ordinary skill in the printing arts, and to respond to specific questions, concerning (1) the teaching of the sentence of col. 1, line 54-55 ("Many sheet fed presses can perfect (print both sides of the paper) in one pass through the press") as that sentence impacts the scope of the invention taught to the printing artisan, and (2) the correct interpretation of the term "over" in the specification and claims.
>
> 3. Regarding U.S. Patent No. 5,630,363 and the use of the word 'over', I would like to offer the following thoughts: The word 'over' when used in the Graphic Arts industry has many meanings. In the patent it is used in two ways, namely (First) one ink printing over (on top of) another ink, coating, colorant, or coating being printed on both sides of the sheet or substrate. Specifically, as of August 14, 1995 - and the same is true today the term 'over' means to one of ordinary skill in the printing art reading the '363 patent either "on top of" (i.e., the same side of) the substrate, or paper, or by the reference in the paragraph at col. 2, lines 49-58 to the term "perfect" with respect to offset lithography, printing on the reverse side. The claims which refer to printing in a subsequent station 'over' an image previously printed means unequivocally either "on top of" or "the reverse side of" To amplify the points I offer the following:
>
> (1) In the first meaning we commonly use the word over when describing overprinting or what a printer would call trapping of an ink. The term refers to the transfer of a coating, ink, or other colorant to the surface of another coating, ink or substrate. The coating ink, or colorant may be wet or dry. This term has been in common usage since at least 1920 in this regard and very possibly earlier.

(2) In the second meaning of the word over describes the printing of a coating, ink, or colorant on both sides of the paper or substrate during one pass on a printing press. This can be accomplished in many ways: (a) the use of a blanket to blanket web press, (b) the use of a double ending hardback web press, (c) the use of a perfecting unit placed anywhere on a sheet fed press, (d) the use of a back printer on a sheet fed press located on any unit of a sheet fed press. The term in this case has been in use since 1880 in this regard and possibly earlier.

4. The term 'perfect' or 'perfecting' in the art teaches one skilled in that there are several options of printing on both sides of the substrate. One option is to 'tumble' the substrate in order to print on the reverse side. I enclose as Exhibit B several literature references concerning 'perfect' or 'perfecting.'

5. As I read the '363 patent, it covers all of the various ways a printer would apply a coating, ink or colorant to another ink, colorant, or substrate to form an image." (Emphasis supplied)

In further support of Applicants' position on this point, Applicants have submitted the declaration of Georg Hartung, Ulrich Jung, and Jurgen Schneider. These men are the co-inventors of the inventions described in the following references which were cited by the Examiner in connection with the present application: German Gebrauchsmuster G 93 05 552.8 (U1) (the "MAN Roland" reference), European Patent 620,115 (the "Hartung '115" reference) and United States Patent No. 5,638,752 (the "Hartung '752" reference). The Examiner cites MAN Roland as the primary § 103 reference for rejecting applicants' reissue claims and has rejected applicants' claims under § 102 in light of the Hartung references. Applicants have attached a copy of the declaration of these co-inventors, which was submitted to the Examiner in a response to the Office Action mailed on April 17, 2001. These inventors had at the time the invention claimed by U.S. Patent No. 5,630,363 was made, and presently have, at least ordinary skill in the art pertaining to the subject matter of the invention.

Georg Hartung, Ulrich Jung, and Jurgen Schneider have declared under oath that they believe that the disclosure of U.S. Patent 5,630,363 reasonably conveys to one skilled in the art of offset printing that the Applicants had possession of the claimed invention as it relates to perfector printing. Furthermore, they have declared that they believe that disclosure of a continuous in-line process *necessarily* implies perfector printing. The Examiner has provided no objective evidence whatsoever countering this evidence and supporting his rejection of the above-listed claims under 35 U.S.C. § 251.

In light of the Applicants' *explicit* discussion of the use of perfector printing in combination with the type of offset presses disclosed therein, the meaning of the word "over" to one of skill in the art of offset printing technology, and the objective evidence provided by

Applicants demonstrating that Applicants' disclosure inherently incorporates perfector printing, Applicants respectfully submit that the Examiner's rejection on this point is improper, and respectfully requests that the Board overrule the Examiner on this point. Specifically, Applicants respectfully request that the Board reverse the decision of the Examiner to reject claims 42-87, 94, 95, 100-102, 109, 110, 112, 113, 119-124, 125, 127-137, 139, and 141-151 under 35 U.S.C. § 251.

2. The Examiner's rejection of claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 under 35 U.S.C. § 112 was improper.

Claims 42-87, 94-96, 100-102, 109, 110, 112, 113, 125, 127-137, 139, and 141-151 have been rejected by the Examiner as containing subject matter not described in the specification. Specifically, the Examiner has stated that "there is no adequate support in the disclosure for the substrate being printed on the other side, i.e. perfector printing. While the Declaration filed Sept. 19, 2001 has been carefully considered there is no objective evidence that a continuous in-line process necessarily implies perfector printing." Title 35 of the United States Code § 112, first paragraph states:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The proper test is whether the original specification "convey[s] with reasonable clarity to those of ordinary skill" that the inventor had in fact invented the claimed subject matter. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1566 (C.A.F.C. 1991).

Applicants respectfully submit that the subject matter of claims 42-87, 94, 95, 100-102, 109, 110, 112, 113, 119-124, 125, 127-137, 139, and 141-151 is inherently described in the application and not directed to new matter and that the disclosure enables a person skilled in the art of printing to make and use the claimed invention. As discussed above, Applicants' own patent specifically describes the use of perfector printing, and Applicants have provided substantial objective evidence in support of their position. Consequently, Applicants respectfully submit that rejection of the claims under 35 U.S.C. § 112, first paragraph, is improper, and

Applicants respectfully request that the Board overrule the Examiner as to the rejections under 35 U.S.C. § 112.

Rejections Under 35 U.S.C. § 103(a) and § 102:

Claims 6-11, 15-38, 42-57, 60-77, 79-81, and 85-151 have been rejected under 35 U.S.C. § 103(a). Claims 6, 10, 29, 31, 38, 44-46, and 49 have been rejected under 35 U.S.C. § 102. The Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness or anticipation. Further, Applicants have submitted objective evidence in the form of the declaration of Georg Hartung, Ulrich Jung, and Jurgen Schneider, which evidence has not been countered by the Examiner. The attached declaration is incorporated by reference for each of the remarks, which are specifically presented below, regarding the Examiner's rejections of claims under 35 U.S.C. § 102 and § 103.

The Manual of Patent Examining Procedure (M.P.E.P.) clearly defines the guidelines to be employed by an Examiner in determining whether a claimed invention is obvious to a person of ordinary skill in light of prior art references. M.P.E.P. § 2141.03 states, in part:

> "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718, 21 U.S.P.Q.2d 1053, 1057 (Fed. Cir. 1991). The examiner must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984). . . . To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person.

In this particular case, Georg Hartung, Ulrich Jung, and Jurgen Schneider, inventors of the MAN Roland and Hartung references, had at the time of Applicants' invention, and presently have, at least ordinary skill in the art of offset lithographic and flexographic printing technology. As specifically stated below with reference to each obviousness rejection, these persons of skill in the art have declared that Applicants' invention is not obvious in light of the references cited by the Examiner.

In re Vaeck, cited with approval in the M.P.E.P., outlines the standard for establishment of a prima facie case of obviousness. The relevant portion of this case reads as follows:

> To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that, with respect to each of his rejections under 35 U.S.C. § 103(a), the Examiner has failed to establish a prima facie case of obviousness, as the Examiner has not:

4 (a) identified, within the references, the specific portion(s) of the references containing the teachings relied upon in making the rejection;

5 (b) identified any teaching or suggestion to make the claimed combination; or

6 (c) identified any teaching or suggestion giving one of skill in the art any reasonable expectation of success in making the combination.

Georg Hartung, Ulrich Jung, and Jurgen Schneider, all persons of at least ordinary skill in the art, have declared that Applicants' invention would not have been obvious and, further, that nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. As will be described in greater detail below, the declaration specifically addresses each of the Examiner's obviousness rejections. This affidavit is solid, objective evidence supporting the patentability of Applicants' claims, which evidence has gone without countering evidence from the Examiner.

Presented summarily without objective support, the Examiner's rejections under 35 U.S.C. § 103 are closely analogous to those made by the Examiner in the recent case of *In re Thrift*, 2002 WL 1830720 (Fed. Cir. Aug. 9, 2002). In that case, the Examiner rejected the Applicants' claims summarily based on what he subjectively believed to be "well known in the art" without identification of any specific teaching, suggestion, or motivation in any reference. The Federal Circuit held that the Examiner's rejection and the Board's affirmance of the rejection were improper. The Federal Circuit explained it's ruling as follows:

> [T]he Board's reliance on "common knowledge and common sense" did not fulfill the agency's obligation to cite references to support its conclusions. Instead, the Board must document its reasoning on the record to allow accountability. This documentation also allows effective judicial review. *In re Thrift*, supra, at 6 (internal citations omitted).

The Federal Circuit went on to explain:

> We agree with appellants that the Board's ground of rejection is simply inadequate on its face. The Board sustained the examiner's very general and broad conclusion of obviousness based on his finding that "[t]he use of grammar is old and well known in the art of speech recognition as a means of optimization which is highly desirable." . . . The Board's decision is not supported by substantial evidence because the cited references do not support each limitation of claim 11. . *In re Thrift*, supra, at 7 (internal citations omitted).

The situation in the present application is, in this respect, identical to the situation in the *Thrift* application. The Examiner has summarily rejected Applicants' claims, even in the face of objective evidence of non-obviousness, without any specific identification of the limitations themselves, or any specific teaching, suggestion, or motivation to combine the references. Accordingly, each of the "general and broad conclusions" of the Examiner is, in the words of the Federal Circuit, "simply inadequate on its face." These rejections may not, therefore, be supported and affirmed, and must be overruled.

3. <u>Claims 6-8, 38, and 49-51 are patentable over the combination of MAN Roland in view of Pantone and Offsetpraxis.</u>

The Examiner has rejected claims 6-8, 38, and 49-51 as being obvious over the combination of the MAN Roland, Pantone and Offsetpraxis references. Independent claim 6, as amended, reads as follows:

> 6. Apparatus for a combined lithographic/flexographic printing process comprising:
> a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;
> one of said stations comprising a flexographic printing station printing an aqueous-based vehicle image using the flexographic process to form a metallic coating;
> a suspended metallic material being included in said aqueous-based vehicle image; and
> at least one of the successive printing stations comprising an offset lithographic printing station printing a color image over the aqueous-based vehicle image using the offset lithographic process in said continuous in-line process.

In the Office Action dated April 17, 2001, the Examiner stated that:

> Claims 6-8, 38, and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland (G 93 05 552.8) in view of Pantone and Offsetpraxis. MAN Roland teaches a combined lithographic and flexographic apparatus and process wherein a flexographic unit may be placed upstream of the lithographic units. (It is noted that MAN Roland discloses printing metallic inks in the body of the disclosure.) Pantone teaches the conventionality of printing/coating, metallic inks upstream of other colors. Offsetpraxis teaches metallic inks having an aqueous based vehicle. It would have been

obvious to one of ordinary skill in the art to utilize the apparatus and method of MAN Roland to print aqueous based metallic inks in view of Pantone and Offsetpraxis to achieve a superior metallic image. With respect to claim 49 the alternative limitation "or" printing on the opposite side does not positively recite actually printing on the other side of the substrate. With respect to the dependent claims it would have been obvious to one of ordinary skill in the art through routine experimentation to use either uniform or non-uniform sized metal particles to achieve the desired metallic effect.

With respect to Claims 6-8, 38, and 49-51, Applicants submit that the Examiner has failed to establish a prima facie case of obviousness, as the Examiner has failed to identify any teaching, suggestion or motivation within the prior art to provide the apparatus and method of MAN Roland to print aqueous based metallic inks to achieve a superior metallic image. The Examiner has not asserted that the Pantone reference discloses flexographic printing of metallic inks upstream of lithographic printing. The Examiner has not asserted that MAN Roland discloses the printing of an aqueous-based vehicle. Similarly, the Examiner has not asserted that Offsetpraxis discloses the use of a flexographic unit upstream of a lithographic unit.

As noted above, in order to establish a prima facie case of obviousness, the Examiner must first identify each and every limitation in the claims in one or more prior art references and then identify some teaching or suggestion motivating one of skill in the art to combine the references in the manner described. Applicant respectfully submits that the Examiner has failed to satisfy at least the second prong of his burden, and his rejection of claims 6-8, 38, and 49-51 is improper. Further, the declaration of Hartung et al. is strong evidence weighing against a finding of obviousness, which evidence has not been seriously addressed or countered by the Examiner.

4. <u>Claims 9 and 52 are patentable over MAN Roland in view of Pantone, Offsetpraxis and Bird.</u>

The Examiner has rejected claims 9 and 52 under 35 U.S.C. §103 (a) as being obvious over MAN Roland in view of Pantone, Offsetpraxis, and Bird. As amended, claim 9 reads as follows:

9. Apparatus as in claim 6 further including:

said flexographic printing station including a plate cylinder having a flexographic plate thereon, a blanket cylinder, and an impression cylinder;

a flexographic plate image transferred from said plate cylinder to said blanket cylinder, said image being formed of said metallic coating, said impression cylinder in ink-transfer relationship with said blanket cylinder, said blanket cylinder transferring said

metallic coating to said substrate for printing said flexographic plate image on said substrate; and

an anilox roller associated with said flexographic plate for supplying said aqueous-based vehicle containing said suspended metallic material to said flexographic plate.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 9 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Pantone and Offsetpraxis as applied to the claims above, and further in view of Bird (US 4,841,903). Bird teaches the conventionality of an adapted flexographic unit (12) wherein the flexographic plate (20a) is mounted on a plate cylinder which contacts a blanket cylinder (23a). See the entire disclosure of Bird. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Pantone and Offsetpraxis, with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. Note the anilox roller of MAN Roland.

With respect to Claims 9 and 52, the Examiner has failed to identify any teaching, suggestion or motivation to one of skill in the art to combine the references in the manner described by the Examiner. Specifically, the Examiner has failed to identify any teaching, suggestion, or motivation to provide the apparatus and method of MAN Roland with a plate cylinder mounted flexographic plate and blanket cylinder so as to selectively utilize the unit as a flexographic or lithographic unit. Applicant respectfully submits that no such teaching, suggestion, or motivation exists. Further, Applicants have provided objective evidence in the form of a declaration, under oath, that this combination would not have been obvious. Accordingly, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness under 35 U.S.C. § 103(a), and the Examiners' rejection should, therefore, be overruled.

5. Claims 42 and 43 are patentable over MAN Roland in view of Pantone, Offsetpraxis, and Schone.

The Examiner has rejected claims 42 and 43 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Pantone, Offsetpraxis, and Schone. As amended, claim 42 reads as follows:

> 42. The apparatus of any of claims 1, 6, 10, 12, 15 and 17, wherein the substrate is printed on both sides in one pass during the continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Pantone and Offsetpraxis as applied to claims 6-8, 38, and 49-51 above, and further in view of Schone et al. (US 4,188,883). Schone et al. teach the conventionality of perfector printing. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Pantone and Offsetpraxis, with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 42 and 43, the Examiner has failed to establish a prima facie case of obviousness because nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Further, the Hartung declarants, clearly persons of at least ordinary skill in the art, have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland with perfector printing in view of Schone so as to print both sides of the substrate in one pass. Accordingly, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness under 35 U.S.C. § 103(a), and the Examiners' rejection should, therefore, be overruled.

6. <u>Claims 10, 29, and 31-33 are patentable over MAN Roland in view of Satterwhite.</u>

The Examiner has rejected claims 10, 29, and 31-33 under 35 U.S.C. 103(a) as being obvious over MAN Roland in view of Satterwhite. As amended, claim 10 reads as follows:

> 10. Apparatus for creating a combined lithographic/flexographic printing process comprising:
>
> a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;
>
> one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and
>
> at least one of the successive printing stations comprising an offset lithographic printing station for printing a second color image over the first color image using the offset lithographic process in said continuous in-line process.

In support of this rejection, the Examiner explained:

> Claims 10, 29, and 31 - 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite (US 4,308,796). While the claims of MAN Roland do not specifically recite printing a flexographic color ink image with the flexographic unit, it is noted that the disclosure of MAN Roland clarifies that the lacquer recited n the claims could be a colored image. However, Satterwhite teaches a

flexographic unit for (either coating or printing, a flexographic image. See the Abstract and column 2 line 40 through column 3 line 10 of Satterwhite. It would have been obvious to one of ordinary skill in the art to provide the apparatus and process disclosed by MAN Roland with the capability of printing, a flexographic image in view of Satterwhite to achieve the benefits of printing with a. flexographic unit. With respect to the dependent claims note that MAN Roland teaches an overcoating unit and both waterless (dry lithography and solvent based inks are notoriously conventional in the art.

With respect to Claims 10, 29, and 31-33, the Examiner has failed to establish a prima facie case of obviousness, as nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Further, the Hartung declarants have declared under oath that it would not have been obvious to provide the apparatus and process disclosed by MAN Roland with the capability of printing a flexographic image in view of Satterwhite to achieve the benefits of printing with a flexographic unit.

7. Claims 11, 30, and 60-66 are patentable over MAN Roland in view of Satterwhite and Bird.

The Examiner has rejected claims 11, 30, and 60-66 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and Bird. As amended, claim 60 reads as follows:

> 60. Apparatus for a combined lithographic/flexographic printing process for printing a multicolored image comprising:
>
> a plurality of successive printing stations for depositing ink to form a series of images on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;
>
> at least one of said flexographic printing stations having:
>
> (1) a plate cylinder and a blanket cylinder, said plate cylinder including a flexographic plate having an image thereon for transferring a flexographic color ink image to said blanket cylinder;
>
> (2) an etched anilox roller for applying a flexographic color ink to said flexographic plate on said plate cylinder;
>
> (3) an impression cylinder in ink-transfer relationship with said blanket cylinder for transferring said flexographic color ink image from said blanket cylinder to one side of said substrate; and
>
> at least one of said succeeding printing stations being a lithographic printing station using offset lithography for printing additional colored ink images on top of said flexographic ink image or on the opposite side to that that previously printed.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 11, 30, and 60 - 66 are rejected under 35 U.S. C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to the claims above, and further in view of Bird ('903). Bird teaches the conventionality of an adapted flexographic unit (12) wherein the flexographic plate (20a) is mounted on a plate cylinder which contacts a blanket cylinder (23a) and the conventionality of interstation dryers (25, 25a). See the entire disclosure of Bird. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Satterwhite, with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. Additionally, it would have been obvious to one of ordinary skill n the art to provide the apparatus and method of MAN Roland, as modified by Satterwhite, with interstation dryers in view of Bird so as to dry the images before subsequent printing and/or coating.

With respect to Claims 11, 30 and 60-66, the Examiner has failed to establish a prima facie case of obviousness, as nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. It would not have been obvious to provide the apparatus and method of MAN Roland with a plate cylinder mounted flexographic plate and blanket cylinder so as to selectively utilize the unit as a flexographic or lithographic unit. It would not have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland with interstation dryers so as to dry images before subsequent printing and/or coating. Further, Applicants have provided objective evidence, in the form of the Hartung declaration, supporting their contention that the combination is not obvious over the cited references.

8. <u>Claim 67 is patentable over MAN Roland in view of Satterwhite, Bird, and Schumacher et al.</u>

The Examiner has rejected claim 67 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite, Bird, and Schmacher et al. As amended, claim 67 reads as follows:

> 67. Apparatus as in claim 60 wherein at least one of said flexographic printing stations prints said flexographic ink image with liquid vehicle slurry containing an encapsulated essence.

In the Office Action, the Examiner explained his rejection as follows:

> Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60 - 66 above, and further in view of Schumacher et al. (US 5.079,044). Schumacher et al. teach the conventionality of printing an encapsulated essence. See column 1 lines 29 - 31 of Schumacher et al., for example. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Satterwhite and Bird, with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating.

With respect to Claim 67, the Examiner has failed to establish a prima facie case of obviousness. The Examiner has failed to identify any teaching, suggestion, or motivation to provide the method of MAN Roland with the step of printing an encapsulated essence to apply a sufficiently heavy coating. Nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. In further support of Applicants' position, the Hartung declarants have declared, under oath, that they do not believe the combination is obvious.

9. <u>Claims 68-71 are patentable over MAN Roland in view of Satterwhite, Bird, and further in view of Pantone and Offsetpraxis.</u>

The Examiner has rejected claims 68-71 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and Bird and further in view of Pantone and Offsetpraxis. As amended, claim 68 reads as follows:

> 68. Apparatus as in claim 60 wherein at least one of said printing stations prints said flexographic ink image with a water-based liquid vehicle containing, suspended particles.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 68 - 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Bird as applied to claims 11, 30, and 60 - 66 above, and further in view of Pantone and Offsetpraxis. Pantone and Offsetpraxis have been addressed above. It would have been obvious to one of ordinary skill in the art to utilize the apparatus and method of MAN Roland, as modified by Satterwhite and Bird, to print aqueous based metallic inks in view of Pintone and Offsetpraxis to achieve a superior metallic image.

With respect to Claims 68-71, the Examiner has failed to establish a prima facie case of obviousness, as the Examiner has not identified any teaching, suggestion, or motivation to utilize

the apparatus and method of MAN Roland to print aqueous based metallic inks in view of to achieve a superior metallic image. Nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Further, persons of ordinary skill in the art have declared under oath that it would not have been obvious to make the combination.

10. Claims 34-36 are patentable over MAN Roland in view of Satterwhite and further in view of Schmacher et al.

The Examiner has rejected claims 34-36 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and further in view of Schmacher et al. As amended, claim 34 reads as follows:

> 34. A method as in claim 29 further including the steps of:
> printing a slurry on said substrate at any of said printing stations in said continuous in-line process;
> using an encapsulated essence in said slurry; and
> printing an overcoating over said slurry at a subsequent printing station in said in-line process to protect said essence.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 34 - 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31 - 33 above, and further in view of Schumacher et al. (US 5,079,044). Schumacher et al. teach the conventionality of printing an encapsulate essence. See column 1 lines 29 - 31 of Schumacher et al. for example. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Satterwhite, with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating. With respect to claim 36 UV curing is notoriously conventional in the art.

With respect to Claims 34-36, the Examiner has failed to establish a prima facie case of obviousness, as he has identified no teaching, suggestion, or motivation to provide the method of MAN Roland with the step of printing an encapsulated essence to apply a sufficiently heavy coating. Nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Further, persons of at least ordinary skill in the art have declared under oath that the combination would not have been obvious.

11. Claims 42, 43, and 53 are patentable over MAN Roland in view of Satterwhite and further in view of Schone et al.

The Examiner has rejected claims 42, 43, and 53 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and further in view of Schone. As amended, claim 53 reads as follows:

> 53. Apparatus for creating a combined lithographic/ flexographic printing process comprising:
>
> a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;
>
> one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and
>
> at least one of the other successive printing stations comprising an offset lithographic printing station for printing a second color image on the reverse side of the substrate of the first color image using the offset lithographic process in said continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 42, 43, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite as applied to claims 10, 29, and 31 - 33 above, and further in view of Schone et al. Schone et al. has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Satterwhite, with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 42, 43, and 53, the Examiner's rejections are erroneous because nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Furthermore, persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland, as modified by Satterwhite, with perfector printing in view of Schone so as to print both sides of the substrate in one pass.

12. Claim 54 is patentable over MAN Roland in view of Satterwhite and Schone and further in view of Bird.

The Examiner has rejected claim 54 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view of Satterwhite and Schone and further in view of Bird. As amended, claim 54 reads as follows:

54. Apparatus as in claim 53 further including:

said flexographic printing station including a plate cylinder, a blanket cylinder, and an impression cylinder;

a flexographic plate on said plate cylinder;

an anilox roller associated with said flexographic plate for supplying a first color to said flexographic plate to form said first color image; and

said blanket cylinder receiving said first color image from said plate cylinder and transferring said first color image to said impression cylinder for printing on said substrate.

In the Office Action, the Examiner explained his rejection as follows:

> Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Satterwhite and Schone et al. as applied to claims 42, 43, and 53 above, and further in view of Bird. Bird has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Satterwhite and Schone et al., with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit.

With respect to Claim 54, the Examiner's rejection is erroneous because nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Furthermore, persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland, as modified by Satterwhite and Schone, with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird to so as to selectively utilize the unit as a flexographic or lithographic unit.

13. <u>Claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144 are patentable over MAN Roland in view of Bird.</u>

The Examiner has rejected claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird. As amended, claim 15 reads as follows:

15. Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;

said printing stations including both lithographic and flexographic printing stations;

a blanket cylinder at least a first one of said flexographic printing stations;

an impression cylinder associated with at least said first one of said flexographic printing stations;

flexographic ink-providing means at said at least first one of said flexographic printing stations for applying a flexographic ink to said blanket cylinder to form an image;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; and

at least one subsequent lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image using offset lithography.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 15 - 23, 37, 44 - 48, 55, 88 - 93, 97 - 99, 103 - 108, 114 - 118, 124, 126 - 130, 138, and 140 - 144 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird ('903). MAN Roland and Bird have been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. With respect to the dependent claims lithographic halftone printing is notoriously conventional in the art as well as lithographic and flexographic solid printing and both sheet fed and web fed units are conventional in the art. Note that MAN Roland teaches a dedicated flexographic station whereas Bird teaches a retractable coater flexographic unit so as to permit selective use of the unit as either a lithographic or flexographic unit.

With respect to Claims 15-23, 37, 44-48, 55, 88-93, 97-99, 103-108, 114-118, 124, 126-130, 138, and 140-144, the Examiner's rejections are erroneous because nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner. Furthermore, persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird to so as to selectively utilize the unit as a flexographic or lithographic unit.

14. <u>Claim 24 is patentable over MAN Roland in view of Bird and further in view of Schumacher.</u>

The Examiner has rejected claim 24 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and further in view of Schmacher. As amended, claim 24 reads as follows:

24. Apparatus as in claim 17 wherein at least one of said flexographic printing stations prints said flexographic ink image with liquid vehicle slurry containing an encapsulated essence.

In the Office Action, the Examiner explained his rejection as follows:

> Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird as applied to the claims above, and further in view of Schumacher et al. Schumacher et al. has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Bird, with he step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating.

With respect to Claim 24, the Examiner's rejection is erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the method of MAN Roland, as modified by Bird, with the step of printing an encapsulated essence in view of Schumacher to apply a sufficiently heavy coating. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

15. <u>Claims 25-28, 131-134, and 145-148 are patentable over MAN Roland in view of Bird and further in view of Pantone and Offsetpraxis.</u>

The Examiner has rejected claims 25-28, 131-134, and 145-148 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and further in view of Pantone and Offsetpraxis. As amended, claim 25 reads as follows:

> 25. Apparatus as in claim 17 wherein at least one of said printing stations prints said flexographic ink image with a water-based liquid vehicle containing suspended particles.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 25 - 28, 131 - 134, and 145 - 148 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird as applied to the claims above, and further in view of Pantone and Offsetpraxis. Pantone and Offsetpraxis have been addressed above. It would have been obvious to one of ordinary skill in the art to utilize the apparatus and method of MAN Roland, as modified by Bird, to print aqueous based metallic inks in view of Pantone and Offsetpraxis to achieve a superior metallic image.

With respect to Claims 25-28, 131-134, and 145-148, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to utilize the apparatus and method of MAN Roland, as modified by Bird, to print aqueous based metallic inks if view of Pantone and Offsetpraxis to achieve a superior metallic image. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

16. Claims 56, 57, 135, 136, 149 and 150 are patentable over MAN Roland in view of Bird and further in view of Roulleau.

The Examiner has rejected claims 56, 57, 135, 136, 149, and 150 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and further in view of Roulleau. As amended, claim 56 reads as follows:

> 56. Apparatus as in claim 55 wherein said liquid coating image printed on said substrate is a white color ink.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 56, 57, 135, 136, 149, and 150 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird as applied to the claims above, and further in view of Roulleau (US 4,109,572). Roulleau teaches printing an opaque white ink by flexography. See column 3 lines 61 - 68 of Roulleau. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Bird, with the step of printing with an opaque white ink in view of Roulleau so as to provide sufficient contrast for subsequently printed colors.

With respect to Claims 56, 57, 135, 136, 149, and 150, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland, as modified by Bird, with the step of printing with an opaque white ink of Roulleau so as to provide sufficient contrast for subsequently printed colors. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

17. Claims 137 and 151 are patentable over MAN Roland in view of Bird and Roulleau and further in view of Schumacher et al.

The Examiner has rejected claims 137 and 151 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and Roulleau and further in view of Schumacher et al. As amended, claim 137 reads as follows:

> 137. The method of Claim 124 or 125 wherein the flexographic images are printed with a liquid vehicle slurry containing an encapsulated essence.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 137 and 151 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird and Roulleau as applied to claims 56, 57, 135, 136, 149, and 150 above, and further in view of Schumacher et al. Schumacher et al. has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Bird and Roulleau, with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating.

With respect to Claims 137 and 151, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the method of MAN Roland, as modified by Bird and Roulleau, with the step of printing an encapsulated essence in view of Schumacher to apply a sufficiently heavy coating. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

18. Claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144 are patentable over MAN Roland in view of Bird and Schone et al.

The Examiner has rejected claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and Schone et al. As amended, claim 80 reads as follows:

> 80. A method of combining offset lithography and flexographic printing in a continuous in-line process comprising the steps of:
>
> providing a substrate;
>
> applying an ink or coating to a blanket cylinder in a pattern with a coating head at a flexographic printing station;

transferring said pattern of ink or coating from said blanket cylinder to one side of the substrate; and

printing a waterless ink pattern on the reverse side of said substrate at least one subsequent offset lithographic printing station in said continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 42, 43, 80, 81, 94 - 96, 100 - 102, 109 - 113, 119 - 123, -25, 127 - 130, 139, and 141 - 144 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird and Schone et al. Each of MAN Roland, Bird, and Schone et al. have been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Bird, with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 42, 43, 80, 81, 94-96, 100-102, 109-113, 119-123, 125, 127-130, 139, and 141-144, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland, as modified by Bird, with perfector printing in view of Schone so as to print both sides of the substrate in one pass. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

19. <u>Claims 131-134 and 145-148 are patentable over MAN Roland in view of Bird and Schone et al.</u>

The Examiner has rejected claims 131-134 and 145-148 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and Schone et al. As amended, claim 131 reads as follows:

> 131. The method of Claim 124 or 125 wherein the flexographic images are printed using a water based liquid vehicle containing suspended particles.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 131-134 and 145-148 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird and Schone et al. as applied to the claims above, and further in view of Pantone and Offsetpraxis. Pantone and Offsetpraxis have been addressed above. It would have been obvious to one of ordinary skill in the art to utilize the apparatus and method of MAN Roland, as modified by Bird and Schone et al., to print aqueous based metallic inks in view of Pantone and Offsetpraxis to achieve a superior metallic image.

With respect to Claims 131-134 and 145-148, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to utilize the apparatus and method of MAN Roland, as modified by Bird and Schone, , to print aqueous based metallic inks if view of Pantone and Offsetpraxis to achieve a superior metallic image. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

20. Claims 135, 136, 149, and 150 are patentable over MAN Roland in view of Bird and Schone et al. and further in view of Roulleau.

The Examiner has rejected claims 135, 136, 149, and 150 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird and Schone et al and further in view of Roulleau. As amended, claim 135 reads as follows:

> 135. The method of Claim 124 or 125 wherein the flexographic images are printed using an opaque color ink.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 135, 136, 149, and 150 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird and Schone et al. as applied to the claims above, and further in view of Roulleau. Roulleau has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Bird and Schone et al., with the step of printing with an opaque white ink in view of Roulleau so as to provide sufficient contrast for subsequently printed colors.

With respect to Claims 135, 136, 149, and 150, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland, as modified by Bird and Schone, with the step of printing with an opaque white ink of Roulleau so as to provide sufficient contrast for subsequently printed colors. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

21. Claims 137 and 151 are patentable over MAN Roland in view of Bird, Schone et al., and Roulleau.

The Examiner has rejected claims 137 and 151 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Bird, Schone et al., and Roulleau. As amended, claim 137 reads as follows:

> 137. The method of Claim 124 or 125 wherein the flexographic images are printed with a liquid vehicle slurry containing an encapsulated essence.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 137 and 151 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Bird, Schone et al., and Roulleau as applied to claims 135, 136, 149, and 150 above, and further in view of Schumacher et al. Schumacher et al. has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Bird, Schone et al., and Roulleau, with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating.

With respect to Claims 137 and 151, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the method of MAN Roland, as modified by Bird, Schone, , and Roulleau, with the step of printing an encapsulated essence in view of Schumacher to apply a sufficiently heavy coating. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

22. Claims 72, 74, 76, 86, and 87 are patentable over MAN Roland in view of Schone et al.

The Examiner has rejected claims 72, 74, 76, 86, and 87 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Schone et al. As amended, claim 72 reads as follows:

> 72. A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:
>
> providing a plurality of successive lithographic/ flexographic printing stations for depositing a series of images on a substrate;
>
> printing an image as one of said thin controlled layers on one side of said substrate at least one of said flexographic stations;
>
> transferring said printed substrate to at least one subsequent printing station in said continuous in-line process; and

printing an image on the reverse side of said substrate having said flexographic ink image, at least one of said other subsequent lithographic printing stations with an offset lithographic process in the continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 72, 74, 76, 86, and 87 are rejected under 35 U.S. C. 103(a) as being unpatentable over MAN Roland in view of Schone et al. Both MAN Roland and Schone et al. have been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 72, 74, 76, 86, and 87, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of MAN Roland with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

23. Claim 73 is patentable over MAN Roland in view of Schone et al. and further in view of Bird.

The Examiner has rejected claim 73 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Schone et al. and further in view of Bird. As amended, claim 73 reads as follows:

> 73. A method as in claim 72 further comprising the step of drying said flexographic ink image on said substrate with an air dryer prior to printing colored ink images thereon.

In the Office Action, the Examiner explained his rejection as follows:

> Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Schone et al. as applied to claims 72, 74, 76, 86, and 87 above, and further in view of Bird. Bird has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of MAN Roland, as modified by Schone et al., with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit.

With respect to Claim 73, the Examiner's rejection is erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide

the apparatus and method of MAN Roland, as modified by Schone et al., with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

24. Claims 77 and 79 are patentable over MAN Roland in view of Schone et al. and further in view of Schmacher et al.

The Examiner has rejected claims 77 and 79 under 35 U.S.C. § 103(a) as being obvious over MAN Roland in view Schone et al. and further in view of Schmacher et al. As amended, claim 77 reads as follows:

> 77. A method as in claim 72 further including the steps of:
> printing a slurry on one side of said substrate at any of said flexographic printing stations in said continuous in-line process;
> using an encapsulated essence in said slurry; and
> printing an ink on the reverse side of said substrate at a subsequent printing station in said in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 77 - 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAN Roland in view of Schone et al. as applied to claims 72, 74, 76, 86, and 87 above, and further in view of Schumacher et al. Schumacher et al. has been addressed above. It would have been obvious to one of ordinary skill in the art to provide the method of MAN Roland, as modified by Schone et al., with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating. With respect to claim 79 UV curing is notoriously conventional in the art.

With respect to Claims 77 and 79, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the method of MAN Roland, as modified by Schone, et al., with the step of printing an encapsulated essence in view of Schumacher et al. to apply a sufficiently heavy coating. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

25. Claims 6, 10, 29, 31, 38, 44-46, and 49 are not anticipated by Hartung ('752) under 102 (e).

26. **Claims 6, 10, 29, 31, 38, 44-46, and 49 are not anticipated by Hartung ('115) under 102 (a).**

With respect to Claims 6, 10, 29, 31, 38, 44-46, and 49, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that Hartung et al. (U.S. 5,638,752) does not teach the apparatus and method as recited.

With respect to Claims 6, 10, 29, 31, 38, 44-46, and 49, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that Hartung et al. (EP 620,115) does not teach the apparatus and method as recited.

27. **Claims 7, 8, 32, 33, 47, 48, 50 and 51 are patentable over Hartung et al. and EP 620,115.**

The Examiner has rejected claims 7, 8, 32, 33, 47, 48, 50 and 51 under 35 U.S.C. § 103(a) as being obvious over Hartung et al. or EP 620,115. As amended, claim 50 reads as follows:

> 50. Apparatus for creating a combined lithographic/ flexographic printing process comprising:
>
> a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;
>
> one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and
>
> at least one of the other successive printing stations comprising an offset lithographic printing station for printing a second color image on the reverse side of the substrate of the first color image using the offset lithographic process in said continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 7, 8, 32, 33, 47, 48, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung et al. ('752) or ('115). Hartung et al. do not specifically disclose the size of the metallic particles, the types of inks, or the types of substrates. However, each of the recited sizes of particles, ink types, or substrate types would either have been obvious to one of ordinary skill in the art through routine experimentation or are conventional in the art.

With respect to Claims 7, 8, 32, 33, 47, 48, 50 and 51, the Examiner's rejections are erroneous because each of the recited sizes of particles, ink types, or substrate types would not have been obvious to one of ordinary skill in the art through routine experimentation and were not

conventional in the art. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

28. Claims 9, 11, 15-23, 25-28, 30, 37, 52, 55-57, 60-66, 68-71, 88-90, 91-93, 97-99, 103-108, 114-118, 124, 126-134, 138, and 140-148 are patentable over Hartung et al. in view of Bird.

The Examiner has rejected claims 9, 11, 15-23, 25-28, 30, 37, 52, 55-57, 60-66, 68-71, 88-90, 91-93, 97-99, 103-108, 114-118, 124, 126-134, 138, and 140-148 under 35 U.S.C. § 103(a) as being obvious over Hartung et al. in view Bird. As amended, claim 15 reads as follows:

> 15. Apparatus for a combined lithographic/flexographic printing process comprising:
> a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;
> said printing stations including both lithographic and flexographic printing stations;
> a blanket cylinder at least a first one of said flexographic printing stations;
> an impression cylinder associated with at least said first one of said flexographic printing stations;
> flexographic ink-providing means at said at least first one of said flexographic printing stations for applying a flexographic ink to said blanket cylinder to form an image;
> a substrate for receiving said flexographic ink image transferred from said blanket cylinder; and
> at least one subsequent lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image using offset lithography.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 9, 11, 15 - 23, 25 - 28, 30, 37, 52, 55 - 57, 60 - 66, 68 - 71, 88 - 90, 91 - 93, 97 - 99, 103 - 108, 114 - 118, 124, 126 - 134, 138, and 140 - 148 are rejected under 35 U.S. C. 103(a) as being unpatentable over Hartung et al. ('752) or ('115) in view of Bird. Bird has been addressed above. It would have been obvious to one of ordinary skill in the art to 'de the apparatus and method of Hartung et al. with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. With respect to the dependent claims note the comments above.

With respect to Claims 9, 11, 15-23, 25-28, 30, 37, 52, 55-57, 60-66, 68-71, 88-90, 91-93, 97-99, 103-108, 114-118, 124, 126-134, 138, and 140-148, the Examiner's rejections are erroneous

because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of Hartung et al. ('752) or ('115) with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

29. Claims 53, 72, 74-76, 81, and 85-87 are patentable over Hartung et al. in view of Schone et al.

The Examiner has rejected claims 53, 72, 74-76, 81, and 85-87 under 35 U.S.C. § 103(a) as being obvious over Hartung et al. in view of Schone et al. As amended, claim 53 reads as follows:

> 53. Apparatus for creating a combined lithographic/ flexographic printing process comprising:
>
> a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;
>
> one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and
>
> at least one of the other successive printing stations comprising an offset lithographic printing station for printing a second color image on the reverse side of the substrate of the first color image using the offset lithographic process in said continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 53, 72, 74 - 76, 81, and 85 - 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung et al. ('752) or ('115) in view of Schone et al. Schone et al. has been addressed above. It would have been obvious to one of ordinary skill n the art to provide the apparatus and method of Hartung et al. with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 53, 72, 74-76, 81, and 85-87, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of Hartung et al. ('752) or ('115) with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

30. **Claims 54, 73, 80, 94-96, 100-102, 109-113, 119-123, 125, 127-134, 139 and 142-148 are patentable over Hartung et al. in view of Bird and Schone et al.**

The Examiner has rejected claims 54, 73, 80, 94-96, 100-102, 109-113, 119-123, 125, 127-134, 139 and 142-148 under 35 U.S.C. § 103(a) as being obvious over Hartung et al. in view of Bird and Schone et al. As amended, claim 80 reads as follows:

> 80. A method of combining offset lithography and flexographic printing in a continuous in-line process comprising the steps of:
>
> providing a substrate;
>
> applying an ink or coating to a blanket cylinder in a pattern with a coating head at a flexographic printing station;
>
> transferring said pattern of ink or coating from said blanket cylinder to one side of the substrate; and
>
> printing a waterless ink pattern on the reverse side of said substrate at least one subsequent offset lithographic printing station in said continuous in-line process.

In the Office Action, the Examiner explained his rejection as follows:

> Claims 54, 73, 80, 94 - 96, 100 - 102, 109 - 113, 119 - 123, 125, 127 - 134, 139, and 142-148 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung et al. ('752) or ('115) in view of Bird and Schone et al. It would have been obvious to one of ordinary skill in the art to provide the apparatus and method of Hartung et al. with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit and with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass.

With respect to Claims 54, 73, 80, 94-96, 100-102, 109-113, 119-123, 125, 127-134, 139 and 142-148, the Examiner's rejections are erroneous because persons of ordinary skill in the art have declared under oath that it would not have been obvious to provide the apparatus and method of Hartung et al. ('752) or ('115) with a plate cylinder mounted flexographic plate and blanket cylinder in view of Bird so as to selectively utilize the unit as a flexographic or lithographic unit and with perfector printing in view of Schone et al. so as to print both sides of the substrate in one pass. Furthermore, nothing in the cited references teaches, suggests or motivates one of ordinary skill in the art to combine the references in the manner described by the Examiner.

31. Claims 6, 10, 29, 31, 38, 44-46, and 49 are not anticipated by MAN Roland under 35 U.S.C. § 102(b).

With respect to Claims 6, 10, 29, 31, 38, 44-46, and 49, the Examiner's rejections are erroneous because the cited references do not teach each and every limitation of the claims. Persons of ordinary skill in the art have declared under oath that MAN Roland does not teach the apparatus and method as recited. With respect to the rejections under 35 U.S.C. §102, a cited reference must teach each and every element of the rejected claim.

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co.* of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). MPEP 2131.

As indicated below, Georg Hartung, Ulrich Jung, and Jurgen Schneider, who are **the inventors** of the § 102 references cited by the Examiner, have declared that their patents do not teach the Applicants' invention.

Therefore, Applicants respectfully submit that the declaration of Georg Hartung, Ulrich Jung, and Jurgen Schneider overcomes the rejection of claims 6-11, 15-38, 42-57, 60-77, 79-81, and 85-151 under 35 U.S.C. § 103(a) and 35 U.S.C. § 102. Accordingly, Applicants respectfully request that the Board reverse the Examiner's rejections of claims 6-11, 15-38, 42-57, 60-77, 79-81, and 85-151 under 35 U.S.C. § 103(a) and 35 U.S.C. § 102.

32. Amended claims 91-123 comply with 37 C.F.R. § 1.75(a)

Claims 91-123 are objected to under 37 C.F.R. § 1.75(a) as being indefinite for failing to point out and distinctly claim the subject matter that applicant regards as the invention. Specifically, the Examiner has stated that it is not clear how the flexographic plate on the blanket cylinder receives a flexographic image from the anilox roller, as there is no image on the anilox roller. Applicants have amended claims 91-123 to clarify the claims in light of the Examiner's objections and respectfully request that the objections to these claims be reversed.

The Examiner also noted that the disclosure does not provide support for the terminology "thin controlled layers" as recited in claim 82. Claim 82 has been amended to recite "series of

images," which is supported by the specification, in place of "thin controlled layers." Applicants, therefore, respectfully request that the objection to claim 82 be reversed.

CONCLUSION

In light of the arguments stated above, Applicants respectfully submit that the Examiner's rejections of claims 6-11, 15-38, and 42-151 are erroneous. As such, Applicants respectfully request that the Board reverse the Examiner's rejections of claims 6-11, 15-38, and 42-151.

Respectfully submitted,
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APPENDIX

6. Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station printing an aqueous-based vehicle image using the flexographic process to form a metallic coating;

a suspended metallic material being included in said aqueous-based vehicle image; and

at least one of the successive printing stations comprising an offset lithographic printing station printing a color image over the aqueous-based vehicle image using the offset lithographic process in said continuous in-line process.

7. Apparatus as in claim 6 wherein said suspended material includes uniform-sized metal particles to form said metallic coating.

8. Apparatus as in claim 6 wherein said suspended material includes nonuniform-sized metal particles to form said metallic coating.

9. (Amended) Apparatus as in claim 6 further including: said flexographic printing station including a plate cylinder having a flexographic plate thereon, a blanket cylinder, and an impression cylinder;

a flexographic plate image transferred from said plate cylinder to said blanket cylinder, said image being formed of said metallic coating, said impression cylinder in ink-transfer relationship with said blanket cylinder, said blanket cylinder transferring said metallic coating to said substrate for printing said flexographic plate image on said substrate; and

an anilox roller associated with said flexographic plate for supplying said aqueous-based vehicle containing said suspended metallic material to said flexographic plate.

10. Apparatus for creating a combined lithographic/flexographic printing process comprising: a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and

at least one of the successive printing stations comprising an offset lithographic printing station for printing a second color image over the first color image using the offset lithographic process in said continuous in-line process.

11. Apparatus as in claim 10 further including:

said flexographic printing station including a plate cylinder, a blanket cylinder, and an impression cylinder;

a flexographic plate on said plate cylinder;

an anilox roller associated with said flexographic plate for supplying a first color to said flexographic plate to form said first color image; and

said blanket cylinder receiving said first color image from said plate cylinder and transferring said first color image to said impression cylinder for printing on said substrate.

15. (Amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

a blanket cylinder at least a first one of said flexographic printing stations;

an impression cylinder associated with at least said first one of said flexographic printing stations;

flexographic ink-providing means at said at least first one of said flexographic printing stations for applying a flexographic ink to said blanket cylinder to form an image;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; and

at least one subsequent lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image using offset lithography.

16. Apparatus as in claim 15 further comprising:

a plate cylinder at said at least first one of said flexographic stations;

a flexographic plate on said plate cylinder for receiving and transferring said flexographic ink to said blanket cylinder; and

said flexographic ink-providing means including a flexographic ink supply and an anilox roller associated with said flexographic ink supply for transferring said flexographic ink to said flexographic plate.

17. Apparatus for a combined lithographic/flexographic printing process for printing a multicolored image comprising:

a plurality of successive printing stations for printing color on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

at least one of said flexographic printing stations having:

(1) a plate cylinder and a blanket cylinder, said plate cylinder including a flexographic plate having an image thereon for transferring a flexographic color ink image to said blanket cylinder;

(2) an etched anilox roller for applying a flexographic color ink to said flexographic plate on said plate cylinder;

(3) an impression cylinder in ink-transfer relationship with said blanket cylinder for transferring said flexographic color ink image from said blanket cylinder to said substrate; and

at least one of said succeeding printing stations being a lithographic printing station using offset lithography for printing additional colored ink images on top of said flexographic ink image.

18. Apparatus as in claim 17 wherein said additional colored ink images are formed with lithographic inks.

19. Apparatus as in claim 17 wherein said colored ink images are formed with waterless inks.

20. Apparatus as in claim 17 further including an air dryer adjacent to said impression cylinder for drying the flexographic ink image transferred to said substrate before said additional colored ink images are printed thereon.

21. (Amended) Apparatus as in claim 17 further including halftone printing plates for printing said additional colored ink images.

22. Apparatus as in claim 17 wherein said flexographic ink image and said colored ink images are printed as solid colors and/or with halftone printing plates in sequence and in registry in said successive printing stations to produce said multicolored image on said substrate.

23. Apparatus as in claim 17 wherein said printing apparatus includes a sheet-fed press.

24. Apparatus as in claim 17 wherein at least one of said flexographic printing stations prints said flexographic ink image with liquid vehicle slurry containing an encapsulated essence.

25. Apparatus as in claim 17 wherein at least one of said printing stations prints said flexographic ink image with a water-based liquid vehicle containing suspended particles.

26. Apparatus as in claim 25 wherein said suspended particles are uniform in size.

27. Apparatus as in claim 25 wherein said suspended particles are nonuniform in size.

28. Apparatus as in claim 25 wherein said suspended particles are metallic particles.

29. A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a plurality of successive lithographic/flexographic printing stations for printing colored ink images on a substrate;

printing a flexographic ink image on said substrate at least one of said flexographic stations;

transferring said printed substrate to at least one subsequent printing station in said continuous in-line process; and

printing colored ink images on top of said flexographic ink image at least one of said subsequent lithographic printing stations with an offset lithographic process.

30. A method as in claim 29 further comprising the step of drying said flexographic ink image on said substrate with an air dryer prior to printing said colored ink images thereon.

31. A method as in claim 29 further including the step of printing a coating on top of said colored ink images at one of said plurality of subsequent printing stations.

32. A method as in claim 29 wherein said colored inks forming said colored ink images are waterless.

33. A method as in claim 29 wherein said colored inks forming said colored ink images are in a solvent-based liquid vehicle.

34. A method as in claim 29 further including the steps of:

printing a slurry on said substrate at any of said printing stations in said continuous in-line process;

using an encapsulated essence in said slurry; and

printing an overcoating over said slurry at a subsequent printing station in said in-line process to protect said essence.

35. A method as in claim 34 further including the step of printing an aqueous-based coating over said slurry.

36. A method as in claim 34 further including the step of printing an ultraviolet coating over said slurry.

37. A method of combining offset lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a substrate;

applying a flexographic ink to a blanket cylinder in a pattern with a coating head at a first flexographic printing station;

transferring said pattern of flexographic ink from said blanket cylinder to the substrate; and

printing a waterless ink pattern over said flexographic ink pattern on said substrate at least one subsequent offset lithographic printing station in said continuous in-line process.

38. A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

printing an aqueous-based vehicle image having suspended particles therein on a substrate at a first flexographic printing station;

transferring said image printed substrate to at least one additional printing station in said continuous in-line process; and

printing additional colored ink images on said printed substrate over said aqueous-based vehicle image in an offset lithographic process at said at least one additional printing station in said in-line process.

42. The apparatus of any of claims 1, 6, 10, 12, 15 and 17, wherein the substrate is printed on both sides in one pass during the continuous in-line process.

43. The method of any of claims 29, 37, 38 or 39 wherein the substrate is printed on both sides in one pass during, the continuous in-line process.

44. (Twice Amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a substrate;

a plurality of successive printing stations for depositing a series of images on one side of a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station for printing a liquid vehicle image on said substrate using a flexographic process; and

at least one of said successive printing stations being a lithographic printing station; whereby said substrate is printed on top of or on the opposite side of that previously printed at said at least one successive lithographic printing stations using the lithographic process in said continuous in-line process.

45. (Twice Amended) Apparatus as in claim 44 wherein at least one image of said series of images at the flexographic printing station is a coating material.

46. (Twice Amended) Apparatus as in claim 44 wherein at least one image of said series of images at said at least one of the lithographic printing stations is an ink.

47. Apparatus as in claim 44 wherein:

said substrate is a paper sheet; and

said apparatus includes a sheet feeder.

48. Apparatus as in claim 44 wherein:

said substrate is a web; and

said apparatus includes a web feeder.

49. An apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station printing an aqueous-based vehicle on one side of the substrate using the flexographic process to form a metallic coating image;

a suspended metallic material being included in said aqueous-based vehicle; and

at least one of the successive printing stations comprising an offset lithographic printing station printing a color image on top of the aqueous-based vehicle or on the opposite side to that previously printed using the offset lithographic process in said continuous in-line process.

50. Apparatus for creating a combined lithographic/ flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and

at least one of the other successive printing stations comprising an offset lithographic printing station for printing a second color image on the reverse side of the substrate of the first color image using the offset lithographic process in said continuous in-line process.

51. Apparatus as in claim 49 wherein said suspended material includes nonuniform-sized metal particles to form said metallic coating.

52. (Amended) Apparatus as in claim 49 further including: said flexographic printing station including a plate cylinder having a flexographic plate thereon, a blanket cylinder, and an impression cylinder;

a flexographic plate image transferred from said plate cylinder to said blanket cylinder, said image being formed of said metallic coating, said impression cylinder in ink-transfer relationship with said blanket cylinder, said blanket cylinder transferring said metallic coating to said substrate for printing said flexographic plate image on said substrate; and

an anilox roller associated with said flexographic plate for supplying said aqueous-based vehicle containing said suspended metallic material to said flexographic plate.

53. Apparatus for creating a combined lithographic/ flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;

one of said stations comprising a flexographic printing station for printing a first color image using the flexographic process; and

at least one of the other successive printing stations comprising an offset lithographic printing station for printing a second color image on the reverse side of the substrate of the first color image using the offset lithographic process in said continuous in-line process.

54. Apparatus as in claim 53 further including:

said flexographic printing station including a plate cylinder, a blanket cylinder, and an impression cylinder;

a flexographic plate on said plate cylinder;

an anilox roller associated with said flexographic plate for supplying a first color to said flexographic plate to form said first color image; and

said blanket cylinder receiving said first color image from said plate cylinder and transferring said first color image to said impression cylinder for printing on said substrate.

55. (Twice Amended) Apparatus for creating a combined lithographic/ flexographic printing process comprising:

a substrate;

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process;

at least one of said successive printing stations being a flexographic station and comprising:

(1) a supply of liquid coating;

(2) a plate cylinder associated with a blanket cylinder, said plate cylinder having a flexographic plate thereon;

(3) an anilox roller associated with said liquid supply coating and said plate cylinder for delivering said liquid coating to said flexographic plate to form an image for transfer to said blanket cylinder;

(4) an impression cylinder for receiving said liquid coating image transferred from said blanket cylinder and printing said image on one side of said substrate; and

at least one offset lithographic printing station for receiving said substrate and printing on top of or on the opposite side to that previously printed.

56. Apparatus as in claim 55 wherein said liquid coating image printed on said substrate is a white color ink.

57. (Twice Amended) Apparatus as in claim 56 further including an air dryer associated with each impression cylinder on said flexographic station, said air dryer having sufficient air velocity for drying said liquid coating before the substrate is transferred to the successive printing station in said continuous in-line process.

58. (Twice Amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process, said printing stations including, both lithographic and at least two flexographic printing stations;

a blanket cylinder at least a first one of said flexographic printing stations;

flexographic ink-providing means for applying a flexographic ink to said blanket cylinder to form an image on one side of a substrate;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; and

at least one subsequent lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top

of said flexographic ink image or the opposite side to that previously printed using offset lithography.

59. Apparatus as in claim 58 further comprising:

a plate cylinder at said at least first one of said flexographic stations;

a flexographic plate on said plate cylinder for receiving and transferring said flexographic ink to said blanket cylinder; and

said flexographic ink-providing means including a flexographic ink supply and an anilox roller associated with said flexographic ink supply for transferring said flexographic ink to said flexographic plate.

60. (Twice Amended) Apparatus for a combined lithographic/flexographic printing process for printing a multicolored image comprising:

a plurality of successive printing stations for depositing ink to form a series of images on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

at least one of said flexographic printing stations having:

(1) a plate cylinder and a blanket cylinder, said plate cylinder including a flexographic plate having an image thereon for transferring a flexographic color ink image to said blanket cylinder;

(2) an etched anilox roller for applying a flexographic color ink to said flexographic plate on said plate cylinder;

(3) an impression cylinder in ink-transfer relationship with said blanket cylinder for transferring said flexographic color ink image from said blanket cylinder to one side of said substrate; and

at least one of said succeeding printing stations being a lithographic printing station using offset lithography for printing additional colored ink images on top of said flexographic ink image or on the opposite side to that that previously printed.

61. Apparatus as in claim 60 wherein said additional colored ink images are formed with lithographic inks.

62. Apparatus as in claim 60 wherein at least one of said colored ink images is formed with a waterless ink.

63. Apparatus as in claim 60 further including an air dryer adjacent to said impression cylinder for drying the colored flexographic ink image transferred to said substrate before said additional colored ink images are printed thereon.

64. (Amended) Apparatus as in claim 60 further including halftone printing plates for printing said additional colored ink images.

65. Apparatus as in claim 60 wherein said colored flexographic ink image and said lithographic colored ink images are printed as solid colors and/or with halftone printing plates in sequence and in registry in said successive printing stations to produce said multicolored image on said substrate.

66. (Amended) Apparatus as in claim 60 wherein at least one of the successive printing stations is a sheet-fed press.

67. Apparatus as in claim 60 wherein at least one of said flexographic printing stations prints said flexographic ink image with liquid vehicle slurry containing an encapsulated essence.

68. Apparatus as in claim 60 wherein at least one of said printing stations prints said flexographic ink image with a water-based liquid vehicle containing, suspended particles.

69. Apparatus as in claim 68 wherein said suspended particles are uniform in size.

70. Apparatus as in claim 68 wherein said suspended particles are nonuniform in size.

71. Apparatus as in claim 68 wherein said suspended particles are metallic particles.

72. (Twice Amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a plurality of successive lithographic and flexographic printing stations for depositing a series of images on a substrate;

printing a flexographic ink image as one of said series of images on one side of said substrate at least one of said flexographic stations;

transferring said printed substrate to at least one subsequent printing station in said continuous in-line process; and

printing an image on the reverse side of said substrate having said flexographic ink image, at least one of said other subsequent lithographic printing stations with an offset lithographic process in the continuous in-line process.

73. (Amended) A method as in claim 72 further comprising the step of drying said flexographic ink image on said substrate with an air dryer prior to printing colored ink images thereon.

74. (Amended) A method as in claim 73 further including the step of printing a coating on top of said colored ink images at one of said plurality of subsequent printing stations.

75. (Amended) A method as in claim 73 wherein said colored ink images are formed from waterless colored inks.

76. (Amended) A method as in claim 75 wherein said waterless colored inks are in a solvent-based liquid vehicle.

77. (Amended) A method as in claim 72 further including the steps of:
printing a slurry on one side of said substrate at any of said flexographic printing stations in said continuous in-line process;

using an encapsulated essence in said slurry; and
printing an ink on the reverse side of said substrate at a subsequent printing station in said in-line process.

78. (Twice Amended) A method as in claim 77 further including the step of printing an aqueous-based coating over said slurry.

79. A method as in claim 77 further including the step of printing an ultraviolet coating over said slurry.

80. A method of combining offset lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a substrate;

applying an ink or coating to a blanket cylinder in a pattern with a coating head at a flexographic printing station;

transferring said pattern of ink or coating from said blanket cylinder to one side of the substrate; and

printing a waterless ink pattern on the reverse side of said substrate at least one subsequent offset lithographic printing station in said continuous in-line process.

81. A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

printing an aqueous-based vehicle having suspended particles therein on one side of a substrate at a flexographic printing station to form an image;

transferring said image printed substrate to at least one additional printing station in said continuous in-line process; and

printing additional images on the reverse side of said printed substrate in an offset lithographic process at said at least one additional printing station in said in-line process.

82. (Three times Amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

(1) providing a plurality of successive printing stations for depositing a series of images on a substrate in said in-line continuous process;

(2) utilizing an anilox roller to transfer a liquid ink as one of said series of images to a flexographic plate image at least one of said printing stations;

(3) printing said liquid ink from said flexographic plate image to one side of said substrate;

(4) transferring said printed substrate with said liquid ink image to a subsequent printing station in said inline printing process;

(5) repeating steps (2)-(4) at subsequent printing stations in said in-line process to achieve a desired opacity ink image on the one side of said substrate; and

(6) printing an ink pattern on the reverse side of said substrate using an offset lithographic process.

83. A method as in claim 82 further including the step of additionally printing ink images over said liquid ink image on said substrate at subsequent ones of said printing stations in said in-line process.

84. A method as in claim 83 wherein said liquid ink is an opaque white color.

85. (Twice Amended) A method of combining offset lithography and flexography using a plurality of successive printing stations in a continuous in-line process, at least one of said stations comprising a flexographic printing station for printing an image on a substrate using a flexographic process:

(1) printing an image at one or more of said printing stations on said substrate using an offset lithographic process;

(2) transferring said image printed substrate to an additional and flexographic printing station and printing at said flexographic and additional printing station a coating on all or part of said image on said substrate;

(3) transferring said substrate to one or more additional printing stations for printing the reverse side of the said substrate; and

(4) printing an image on said reverse side of said substrate at one of said one or more printing stations using an offset lithographic process in the continuous inline process.

86. (Twice Amended) Apparatus for a combined offset lithographic and flexographic printing process comprising:

(1) a substrate;

(2) a plurality of successive printing stations for depositing a series of images selected from a group consisting of lithographic and flexographic inks, coatings and slurries on one or both sides of a substrate in a continuous in-line process;

(3) at least one of said stations comprising a flexographic printing station for printing an image on said substrate using a flexographic process; and

(4) at least one of said successive printing stations being an offset lithographic printing station whereby said offset lithographic printing station is used to deposit one image of said series of images on either side of the said substrate in the continuous in-line process.

87. (Twice Amended) Apparatus for a combined offset lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing images on a substrate in a continuous in-line process, said plurality of successive printing stations including at least one offset lithographic printing station and at least one flexographic printing station for depositing lithographic inks, and one or more flexographic inks, coatings and slurries on said substrate, whereby said lithographic inks, and said one or more flexographic inks, coatings and slurries may be printed successively on one or both sides of said substrate in the continuous in-line process.

88. The apparatus of Claim 15 wherein the flexographic ink-providing means is an anilox roller mounted in an auxiliary retractable coater unit.

89. (Amended) The apparatus of Claim 15 wherein a high-velocity air dryer is associated with the impression cylinder of said at least a first one of said flexographic printing stations.

90. The apparatus of claim 89 wherein the flexographic ink-providing means is an anilox roller mounted in an auxiliary retractable unit.

91. (Three Times Amended) Method of combining offset lithographic and flexographic printing in a continuous in-line sheet-fed process, combining the steps of:

(a) providing a plurality of successive offset lithographic sheet-fed printing stations for printing images on cut paper sheets,

(b) providing one or more flexographic printing stations prior to at least one of said offset lithographic stations for printing a flexographic image on said cut paper sheets, each of said flexographic printing stations comprising,

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon,

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder, and

(3) an impression cylinder in image-transferring relationship with said blanket cylinder for transferring said flexographic image from said flexographic plate to said cut paper sheets;

at least one of said succeeding printing stations being a lithographic printing station subsequent to said flexographic printing stations, and using offset lithography for printing additional images on top of said flexographic image on said cut paper sheets; and

(c) providing a high-velocity air dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic image printed on said cut paper sheets.

92. The method of Claim 91 wherein the printing of the flexographic image is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket.

93. (Amended) The method of Claim 91 wherein the printing of the flexographic image is accomplished by the anilox roller being mounted in a flexographic printing station.

94. (Three Times Amended) Method of combining offset lithographic and flexographic printing in a continuous in-line sheet-fed process, combining the steps of:

(a) providing a plurality of successive offset lithographic sheet-fed printing stations for printing images on one or both sides of each of a succession of cut paper sheets;

(b) providing one or more flexographic stations prior to at least one of said offset lithographic stations for printing a flexographic image on one side of each of said cut paper sheets, each flexographic printing station comprising:

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in image-transferring relationship with said blanket cylinder for transferring said flexographic image from said flexographic plate to said cut paper sheets;

(c) providing at least one succeeding printing station subsequent to said flexographic printing stations, and being a lithographic printing station using offset lithography for printing or more images on the reverse side of the side on which said flexographic image was printed; and

(d) providing a high velocity air dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic image printed on said cut paper sheets.

95. The method of Claim 94 wherein the printing of flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

96. (Amended) The method of Claim 94 wherein the printing of flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

97. (Three Times Amended) Apparatus for a combined lithographic and flexographic printing process for printing a multicolored image on a succession of sheets comprising:

(a) a plurality of successive printing stations for printing an image on a succession of sheets in a continuous in-line process, said printing stations including both lithographic and one or more flexographic printing station;

(b) said flexographic printing stations having:

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in an image-transfer relationship with said blanket cylinder for transferring said flexographic color image from said flexographic plate to said succession of sheets;

at least one of said succeeding of printing stations being a lithographic printing stations subsequent to said flexographic printing stations, and using offset lithography for printing additional images on top of said flexographic image; and

(c) a high velocity air dryer associated with the impression cylinder of each flexographic printing stations for quickly drying the flexographic image printed on said succession of sheets.

98. The apparatus of Claim 97 wherein the printing of flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

99. (Amended) The apparatus of Claim 97 where in the printing of flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

100. (Three Times Amended) Apparatus for a combined lithographic and flexographic printing process for printing multicolored images on a succession of sheets, comprising:

(a) a plurality of successive printing stations for printing images on one or both sides of a succession of sheets in a continuous in-line process said printing stations including both lithographic and one or more flexographic printing stations;

(b) said one or more flexographic printing stations having;

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in an image-transferring relationship with said blanket cylinder for transferring said flexographic image from said flexographic plate to said succession of sheets;

(c) at least one of said succeeding printing stations being an offset lithographic printing station subsequent to said flexographic printing station, and using offset lithography for printing one or more additional images on the reverse side of the side on which said flexographic image was printed; and

(d) a high velocity air dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic image printed on said succession of sheets.

101. The apparatus of Claim 100 wherein the printing of flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

102. (Amended) The apparatus of Claim 100 wherein the printing of flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

103. (Twice Amended) Method of combining offset lithographic and flexographic printing in a single pass printing process, combining the steps of:

(a) providing a plurality of successive offset lithographic printing stations for printing images on a substrate,

(b) providing one or more flexographic printing stations prior to at least one of said offset lithographic printing stations for printing one or more flexographic images on said substrate, each of said flexographic printing stations comprising:

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in image-transferring relationship with said blanket cylinder for transferring said flexographic images from said flexographic plate to said substrate; and

(c) providing a dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic images printed on said substrate.

104. The method of Claim 103 wherein the printing process is continuous in-line.

105. The method of Claim 103 wherein the substrate comprises cut paper sheets.

106. The method of Claim 103 wherein the substrate comprises a continuous web.

107. The method of Claim 103 wherein the printing of the flexographic image is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket.

108. (Amended) The method of Claim 103 wherein the printing of the flexographic image is accomplished by the anilox roller being mounted in a flexographic printing station.

109. (Twice Amended) Method of combining offset lithographic and flexographic printing in a continuous in-line printing process, combining the steps of:

(a) providing a plurality of successive offset lithographic sheet-fed printing stations for printing images on a substrate;

(b) providing one or more flexographic stations prior to at least one of said offset lithographic printing stations for printing one or more flexographic images on said substrate, each flexographic printing station comprising:

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in image-transferring relationship with said blanket cylinder for transferring said flexographic images from said flexographic plate to said substrate;

(c) after said flexographic printing, stations, one or more succeeding offset lithographic printing stations for printing one or more images on the reverse side of the side on which said flexographic images was printed; and

(d) providing a dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic images printed on said substrate.

110. The method of Claim 108 wherein the substrate comprises cut paper sheets.

111. The method of Claim 103 wherein the substrate comprises a continuous web.

112. The method of Claim 108 wherein the printing of one or more flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

113. (Amended) The method of Claim 108 wherein the printing of one or more flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

114. (Twice Amended) Apparatus for a combined offset lithographic and flexographic single pass printing process for printing one or more images on a substrate, comprising:

(a) a plurality of successive offset lithographic printing stations for printing lithographic images on a substrate;

(b) one or more flexographic printing stations prior to at least one of said offset lithographic printing stations for printing one or more flexographic images on said substrate, each of said flexographic printing stations having:

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having one or more images thereon;

(2) an anilox roller for applying ink to said flexographic plate on said blanket cylinder; and

(3) an impression cylinder in an image-transfer relationship with said blanket cylinder for transferring said one or more flexographic images from said flexographic plate to said substrate; and

(c) a dryer associated with the impression cylinder of each flexographic printing stations for quickly drying said one or more flexographic images printed on said substrate.

115. (Amended) The apparatus of Claim 114 wherein the printing process is continuous in-line.

116. (Amended) The apparatus of Claim 114 wherein the substrate comprises cut paper sheets.

117. (Amended) The apparatus of Claim 114 wherein the printing of one or more flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

118. (Amended) The apparatus of Claim 112 where in the printing of flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

119. (Twice Amended) Apparatus for a combined lithographic and flexographic continuous in-line printing process for printing one or more images on substrates comprising:

(a) a plurality of successive offset lithographic printing stations for printing images on said substrates;

(b) one or more flexographic printing stations prior to at least one of said offset lithographic printing stations for printing one or more flexographic images on said substrates, each of said flexographic printing stations having;

(1) a blanket cylinder, said blanket cylinder including a flexographic plate having an image thereon;

(2) an anilox roller for applying ink to said flexographic plate on said plate cylinder; and

(3) an impression cylinder in an image transferring relationship with said blanket cylinder for transferring said flexographic images from said flexographic plate to said substrates;

(c) at least one of said succeeding printing stations being a lithographic printing station using offset lithographic for printing, one or more additional images on the reverse side of said substrates on which said flexographic image was printed; and

(d) dryer associated with the impression cylinder of each flexographic printing station for drying the flexographic images printed on said substrates.

120. (Twice Amended) The apparatus of Claim 119 wherein the printing process is intended for a succession of cut paper sheets that are fed by a sheet feeder.

121. (Amended) The apparatus of Claim 119 wherein said substrates are a continuous web.

122. The apparatus of Claim 119 wherein the printing of one or more flexographic images is accomplished by the anilox roller being mounted in an auxiliary retractable coater unit adapted to engage said flexographic plate on said blanket cylinder.

123. (Amended) The apparatus of Claim 119 wherein the printing of one or more flexographic images is accomplished by the anilox roller being mounted in a flexographic printing station.

124. (Amended) Method of combining offset lithographic and flexographic printing in a single pass printing process combining the steps of:

(a) providing a plurality of offset lithographic printing stations for printing one or more images on a substrate;

(b) providing one or more flexographic printing stations prior to at least one of said plurality of offset lithographic printing stations for printing one or more flexographic images on said substrate; and

(c) providing a dryer associated with said one or more flexographic printing stations for drying said flexographic images printed on said substrate.

125. (Amended) Method of combining offset lithographic and flexographic printing in a continuous in-line printing process, combing the steps of:

(a) providing a plurality of offset lithographic printing stations for printing one or more images on a substrate;

(b) providing one or more flexographic printing stations prior to at least one of said plurality of offset lithographic printing stations for printing one or more flexographic images on said substrate;

(c) after said one or more flexographic printing stations, providing one or more succeeding printing offset lithographic printing stations for printing one or more images on the reverse side of the side on which said flexographic images were printed; and

(d) providing a dryer associated with said one or more flexographic printing stations for drying the flexographic images printed on said substrate.

126. The method of Claim 124 wherein the printing process is continuous in-line.

127. The method of Claim 124 or 125 wherein the substrate comprises cut paper sheets.

128. The method of Claim 124 or 125 wherein the substrate comprises a continuous web.

129. The method of Claims 124 or 125 wherein the printing, of the flexographic image is accomplished by an anilox roller being mounted in an auxiliary retractable coater unit.

130. (Amended) The method of Claim 124 or 125 wherein the printing of the flexographic image is accomplished by an anilox roller being mounted in a flexographic printing station.

131. The method of Claim 124 or 125 wherein the flexographic images are printed using a water based liquid vehicle containing suspended particles.

132. The method of Claim 131 wherein said suspended particles are uniform in size.

133. The method of Claim 131 wherein said suspended particles are nonuniform in size.

134. The method of Claim 131 wherein said suspended particles are metallic particles.

135. The method of Claim 124 or 125 wherein the flexographic images are printed using an opaque color ink.

136. The method of Claim 135 wherein the flexographic images are printed using a white color opaque ink.

137. (Amended) The method of Claim 124 or 125 wherein the flexographic images are printed with a liquid vehicle slurry containing an encapsulated essence.

138. The apparatus for a combined offset lithographic and flexographic single pass printing process for printing one or more images on a substrate, comprising:

(a) a plurality of successive offset lithographic printing stations for printing images on a substrate;

(b) one or more flexographic printing stations prior to at least one of said offset lithographic printing stations for printing one or more flexographic images on said substrate; and

(c) a dryer associated with each flexographic printing station for drying said flexographic images printed on said substrate.

139. Apparatus for a combined offset lithographic and flexographic continuous in-line printing process, comprising:

(a) a plurality of offset lithographic printing stations for printing one or more images on a substrate;

(b) one or more flexographic printing stations prior to at least one of said offset lithographic printing stations for printing, one or more flexographic images on said substrate;

(c) one or more succeeding offset lithographic printing stations after said flexographic printing stations for printing one or more images on the reverse side of the side on which said flexographic images were printed; and

(d) a dryer associated with each flexographic printing, stations for drying the flexographic images printed on said substrate.

140. The apparatus of Claim 138 wherein the printing process is continuous in-line.

141. (Amended) The apparatus of Claim 138 or 139 wherein the printing stations are for cut paper sheets.

142. (Amended) The apparatus of Claim 138 or 139 wherein the printing stations are for a continuous web.

143. The apparatus of Claims 138 or 139 wherein the printing of the flexographic image is accomplished by an anilox roller being mounted in an auxiliary retractable coater unit.

144. (Amended) The apparatus of Claim 138 or 139 wherein the printing of the flexographic image is accomplished by an anilox roller being mounted in a flexographic printing station.

145. The apparatus of Claim 138 or 139 wherein the flexographic images are printed using a water based liquid vehicle containing suspended particles.

146. The apparatus of Claim 145 wherein said suspended particles are uniform in size.

147. The apparatus of Claim 145 wherein said suspended particles are nonuniform in size.

148. The apparatus of Claim 145 wherein said suspended particles are metallic particles.

149. The apparatus of Claim 138 or 139 wherein the flexographic images are printed using an opaque color ink.

150. The apparatus of Claim 149 wherein the flexographic images are printed using a white color opaque ink.

151. (Amended) The apparatus of Claim 138 or 139 wherein the flexographic images are printed with a liquid vehicle spin containing an encapsulated essence.